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REMARKS

Correction of the typographical error in the Information Disclosure Statement is much appreciated.

Claim Objections

The Examiner noted an error in claim 10, including an extra word. The suggested correction appears in claim 10 above.

Claim Rejections - 35 U.S.C. §103

The subject matter of all claims herein were commonly owned at the time the inventions defined by the claims were made.

Claims 1-3, 7-9, 12, 14-16, 18, 20, 22, 24, 26, and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Re 36,196 to Eberhardt.

Applicant has noted with appreciation the indication of allowability of claims 5, 10, 11, 13, 17, 19, 21, and 23. Since those claims are all dependent claims and are of somewhat narrow scope, and because applicant believes that with further consideration the Examiner will recognize that some or all of the independent claims are allowable, applicant has not at this time rewritten the allowable claims as suggested but would like to reserve the right to provide the rewritten claims if and to the extent deemed necessary. Another factor, of course, is the expense of adding eight independent

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claims to the application at current rates.

In the Examiner's reading of claim 1 on Eberhardt '196, it is apparent that there are a number of parts which are similar to those of the applicants. Eberhardt shows a foam proportioner 15 (shown in detail in Eberhardt U.S. Patent 4,633,895) connected to his foaming agent reservoir 120, but this proportioner attempts to maintain a constant ratio of foaming agent to water. Applicant's "differential pressure valve" is connected to the recited "metering valve . . . for varying the proportion of said foaming agent to said fluid (water)". Eberhardt's foam proportioner 15 does not vary the proportion, as claimed.

It was stated that Eberhardt does not show a separate engine for the compressor. Applicants would point out that their system can be viewed as a sort of miniature self-contained system mounted on a frame dimensioned to fit in the bed of a pick-up truck. Thus, the engines are much smaller and lighter than the engine of a regular fire truck. The system does not connect to or make use of the engine or transmission or drive line of the associated truck.

Applicants' system has two engines for the very practical reason that it may receive water from a source, such as a hydrant, which may have substantially more pressure than the self-contained tank. As a result, it may be desired to decrease the speed of the water pump to compensate for this increased pressure, while maintaining the compressor output. If the compressor were operating from the same motor, this would not be possible. It is, therefore, desirable to be able to keep the compressor

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speed at a desired level, while the speed of the water pump is reduced. Both engines are normally or occasionally operated at the same time but need to be separately controlled.

Another reason for having two motors is that for some functions of the fire-fighting system, it is simply not necessary to operate the compressor and it saves fuel to turn the compressor engine off.

It was also stated that Eberhardt does not disclose the use of air metering valves, but that the patent to Grindley et al. (U.S. Patent 5,009,244) discloses "a fire fighting foam mixing system having an air metering valve 16". Grindley et al.'s valve 16 is not an air metering valve, but a valve for metering foam agent. There is no air metering valve in the Grindley et al. '244 patent.

It thus appears that Eberhardt falls short of anticipating applicants' claim 1, which is properly allowable, because:

- 1) Eberhardt's foam proportioner does not include a valve for varying the proportion of foaming agent to water.

2. The suggested combination of Eberhardt and Grindley et al. fails to anticipate the recited "air metering valve" because Grindley et al.'s valve 16 is not an air metering valve.

3. The references do not show the claimed second engine driving the compressor.

Claim 2 is dependent upon claim 3 and also upon claim 1. It was stated by the

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Examiner that it

"would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the fire-fighting system of Eberhardt with the bladder of Grindley in order to properly respond to pressure".

Claim 2 is believed allowable along with claim 1. Also, it seems unlikely that one having the invention of Eberhardt available would see any point in substituting the system of Grindley et al. when Eberhardt's foam proportioner 15 provides a similar function.

With respect to claim 3, it is noted that this claim is dependent upon claim 1 and is believed allowable for the same reasons. Also, the Examiner noted that Eberhardt ('895) shows a valve 20 between the foaming agent reservoir and the proportioner 15. Valve 20 of the '895 patent is merely a check valve to prevent backflow from piston additive pump 18 to the reservoir 17. It does not "disconnect the flow of foaming agent to said (proportioner 15)".

Claim 7 has been amended to recite "an auxiliary conduit connected to said (main water) conduit for driving said hose reel". Neither Eberhardt nor Grindley et al. disclose or suggest a hose reel or how it is driven. This claim is dependent upon claim 1 and is believed allowable on its own as well as because of its dependency from claim 1.

With regard to claim 12, it is noted that Eberhardt's "foam proportioner" is not a "differential pressure valve". As recognized by the Examiner, there is no "second engine", and there is no "air metering valve" because the air flow from the air compressor 13 flows directly into the water pipe 104 with no obstruction other than

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check valve 131, which does not provide a metering function. It is, therefore, believed that claim 12 clearly distinguishes over Eberhardt and is properly allowable.

Claim 18 is an independent claim and recites a "differential pressure valve" which is not the same as Eberhardt's "foam proportioner 15". Also, there is no "foam selector metering valve for varying the proportion of foam agent to water" as recited in claim 18 as amended. This distinguishes over Eberhardt because in Eberhardt's system the proportioner 15 provides only a fixed proportion of foam to water. Claim 18 also recites "mixing means connected to said foam selector metering valve and to said air metering valve for mixing compressed air with said water/foam solution". Since there is no "air metering valve", this last recitation to the mixing means is also meaningless as read on Eberhardt.

With respect to claim 20, Eberhardt shows no "differential pressure valve for mixing compressed air with the water or water/foam supply". There is also no "control panel" with a "foam selector valve" because Eberhardt has no such foam selector valve. Lacking these elements, claim 20 should be allowed.

Claim 25 has been significantly amended to recite "a frame suitable for carrying said system, said system comprising" and then follows a listing of a number of components. But, the term "mount" has been changed to "frame" to be consistent with the specification. The claim further recites "a reel-in hose", and no such reel-in hose is shown in the reference. The claim also recites:

"selector valve means connected to the source of foam concentrate and to said water conduit to select variable

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proportions of foam to water to provide a water/foam mixture".

Eberhardt does not show any such corresponding "selector valve means". Together these elements constitute a new combination and claim 25, thus, should be allowed.

Claim 14 is dependent upon claim 12 and has been amended to recite that the claimed system "is a completely integrated system including a control panel installed within a frame and carried on the bed of a pick-up truck". This defines over Eberhardt where the system is driven from a fire-truck engine and which has a separate gear box driven by the engine for operating the water pump and the air compressor. This claim is also believed to be allowable because of its dependency from claim 12 discussed above.

Claim 27 is now dependent upon claim 25 and is believed allowable for the same reasons as claim 25 discussed above. It has also been amended to change the word "mount" to --frame--, which has antecedent basis in the specification.

With respect to claim 8, Eberhardt is said to disclose that "the suction 100 to the fire pump is adopted to be connected to a water supply that could be a hydrant or a tank". Claim 8, however, recites "a valve connected" to said pump for disconnecting said pump from said source (on the truck) and connecting said pump to another source of fluid. No such "valve" appears in Eberhardt. Claim 8 is also believed to be allowable because of its dependency from claim 1 discussed above.

Claim 15 is dependent upon claim 12 but is somewhat similar to claim 8 in that it also recites the water valve, which switches between a contained water tank and an

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external source of water. While Eberhardt states that their water conduit 100 might be connected to various sources, the claimed valve is not shown.

Claim 15 is dependent upon claim 12 and sets forth two sources of water, one being the tank carried on the truck and the other being an external source. This claim then recites

"a water valve (is) connected between said tank and said pump, said water valve is movable to a first position connecting said pump to said tank and a second position connecting said pump to an external source of water".

Again, the water valve as such is not shown or actually described in Eberhardt. Claim 15 is, therefore, believed allowable on its own as well as because of its dependency from claim 12.

Claim 9 is dependent upon claim 1 and recites that the

"air compressor includes a lubrication system, a heat exchanger is connected to said lubrication system, and said heat exchanger includes a water passage connected to receive water from said pump for cooling said lubrication system".

Eberhardt's compressor is quite different in that it is a vane type and he supplies foam-like mixture for cooling and peripheral sealing of the vanes. Applicants have an "oil flooded rotary screw type" compressor in which oil is cooled by plain water from the pump 18 to the heat exchanger 72. This water is then returned to the tank. Eberhardt shows nothing comparable and is, therefore, believed that claim 9 clearly distinguishes over Eberhardt on its own as well as because of its dependency from claim 1.

Claim 16 is dependent upon claim 12 recites that the air compressor has a

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lubrication system and also

"a heat exchanger is connected to said lubrication system and cooling water is supplied from said pump through said heat exchange and back to said tank".

Nothing comparable is shown in Eberhardt, and it is believed that this claim is allowable both on its own and because of the fact that it is dependent from properly allowable claim 12.

Claim 24 is dependent upon claim 9 and recites "heated water from said lubrication system is connected to said source". Here again the cooling system for the compressor lubrication system is described, and it is clear that Eberhardt, since he relies on the foam/water mixture for cooling of his vane-type compressor does not have "heated water from said lubrication system connected to said source (of water)".

Thus, this claim also distinguishes over Eberhardt, both on its own and because of the distinctions pointed out above relative to claim 9.

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. Re 36,196 to Eberhardt as applied to claim 1, and further in view of U.S. Patent No. 6,009,953 to Laskaris et al. Claim 4 is dependent upon claim 1 and has been amended to recite

"said system is installed within a frame carried in a bed of a pick-up truck and further comprises a control panel including starter switches for each of said first engine and said second engine".

It is quite clear from reading the Eberhardt disclosure that his system is certainly not installed within a frame carried in the bed of a pick-up truck, since the gear box 10 is

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directly connected to the fire truck engine 11 through a clutch 30 and the gear box drives an air compressor 13 and the water pump 12. Laskaris et al. is similar but includes microprocessors 55 for controlling the hydrostatic transmission driving a foam pump for supplying foam agent to the water supply. Even if it were reasonable to combine the references as suggested, the claim would not be met because neither reference shows two engines. Separate recited controls for the separate engines are a significant item as set forth in the discussion above regarding the benefit of having two engines in the system. The claim also recites "a subpanel containing selecting means connected to said metering valve for selecting a desired proportion of foaming agent to said fluid".

As set forth above, Eberhardt does not show any means of selecting a desired proportion of foaming agent, but only supplies a single fixed proportion of foaming agent to said fluid. It is, therefore, believed that claim 4 clearly recites novelty over and above Eberhardt as well as because of its dependency from claim 1.

Claim 6 is dependent upon claim 4 and is believed to distinguish over Eberhardt and Laskaris in reciting "a second control for selecting a desired air flow rate". Neither reference shows any means for selecting a desired air flow rate". Since this air flow rate is directly driven from the gear box by driving air compressor 13, there is no means provided for varying the air flow resulting from the operation of compressor 13. Claim 6 is, therefore, believed to be allowable along with claims 1 and 4 from which it depends.

Claim 25 has been discussed above and is believed to distinguish over

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Eberhardt or Laskaris et al. in reciting that the system is carried on the frame while mounted on the bed of a truck, and secondly, that neither provide means or means to "select variable proportions of foam to water to provide a water/foam mixture". Claim 25 is, therefore, believed clearly allowable over either Eberhardt or Laskaris et al.

It is believed that the claims are now in condition for allowance and favorable action is requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert C. Smith", is written over a horizontal line.

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